

फरवरी  
Feb  
2024

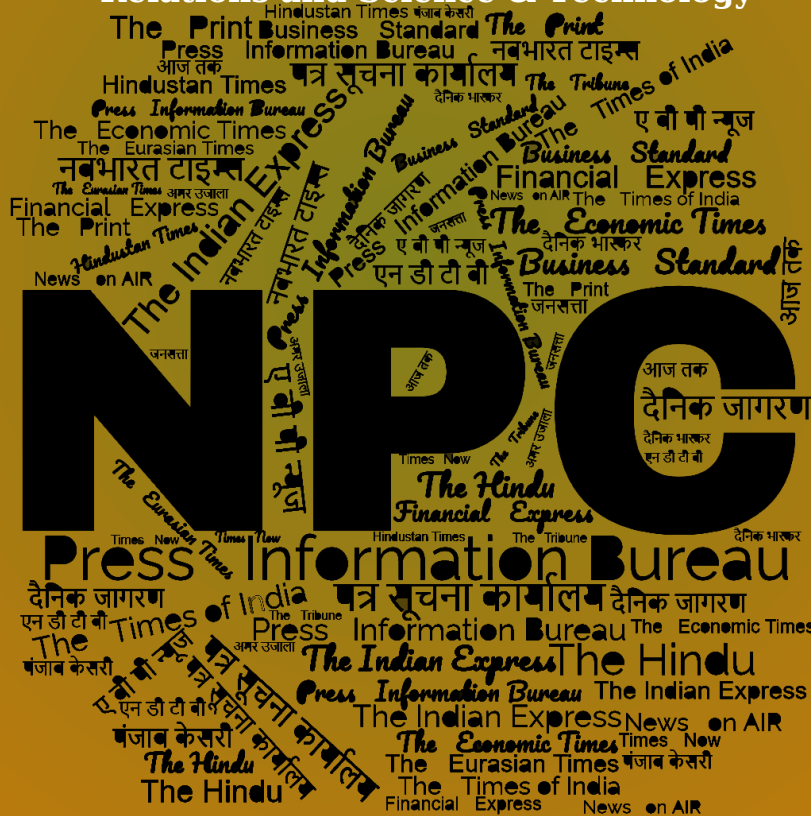
खंड/Vol. : 49 अंक/Issue : 29

09/02/2024

# समाचार पत्रों से चयित अंश Newspapers Clippings

डीआरडीओ समुदाय को डीआरडीओ प्रौद्योगिकियों, रक्षा प्रौद्योगिकियों, रक्षा नीतियों, अंतर्राष्ट्रीय संबंधों और विज्ञान एवं प्रौद्योगिकी की नूतन जानकारी से अवगत कराने हेतु दैनिक सेवा

A Daily service to keep DRDO Fraternity abreast with DRDO Technologies, Defence Technologies, Defence Policies, International Relations and Science & Technology



रक्षा विज्ञान पुस्तकालय

Defence Science Library

रक्षा वैज्ञानिक सूचना एवं प्रलेखन केंद्र

Defence Scientific Information & Documentation Centre

मेटकॉफ हाउस, दिल्ली - 110 054

Metcalf House, Delhi - 110 054

# CONTENTS

S. No.	TITLE	Page No.
	<b>DRDO News</b>	<b>1</b>
	<b>DRDO Technology News</b>	<b>1</b>
1.	दुनिया की पसंदीदा बनी ब्रह्मोस क्रूज मिसाइल, सऊदी डिफेंस शो में भारतीय 'ब्रह्मास्त्र' की धूम, बंपर ऑर्डर	नवभारत टाइम्स 1
	<b>Defence News</b>	<b>2-9</b>
	<b>Defence Strategic: National/International</b>	<b>2-9</b>
2.	Armed Forces' Nari Shakti on a Global Stage: Sqn Ldr Bhawana Kanth, Col Ponung Doming & Lt Cdr Annu Prakash Share their Remarkable Journeys at World Defence Show 2024 in Riyadh	<i>Press Information Bureau</i> 2
3.	Defence Ministry Lauds Women's Participation in Saudi Defence Show	<i>Hindustan Times</i> 3
4.	Navy Proceeds with Heavyweight Torpedo Import and Development	<i>The Economic Times</i> 4
5.	India to Host 9-Day Milan Naval Exercise from Feb 19; 50 Countries Likely to Participate	<i>The Economic Times</i> 5
6.	Indian, French Navy Hold 17th Staff Talks; Discuss Ongoing Naval Activities, New Avenues of Cooperation	<i>The Times of India</i> 6
7.	India, Saudi Arabia Conduct First Joint Military Exercise 'SADA TANSEEQ'	<i>Business Standard</i> 6
8.	Ajit Doval, Greek NSA Explore Collaboration in Cybersecurity, Space, and Defence	<i>Hindustan Times</i> 7
9.	US Conducts Self-defence Strikes Against Houthi Cruise Missiles in Red Sea	<i>The Print</i> 7
10.	South China Sea: Ships from US, Australia and Japan Conduct Joint Drills in Defiance of Beijing	<i>Firstpost</i> 8
	<b>Science &amp; Technology News</b>	<b>9-10</b>
11.	ISRO to Launch INSAT-3DS Meteorological Satellite on February 17	<i>Business Line</i> 9

# नवभारत टाइम्स

Thu, 08 Feb 2024

## दुनिया की पसंदीदा बनी ब्रह्मोस क्रूज मिसाइल, सऊदी डिफेंस शो में भारतीय 'ब्रह्मास्त्र' की धूम, बंपर ऑर्डर

रूस के सहयोग से बनाई गई भारत की ब्रह्मोस सुपरसोनिक क्रूज मिसाइल दुनियाभर में पसंदीदा बनकर उभरी है। भारत की यह मिसाइल दक्षिण पूर्व एशिया से लेकर लैटिन अमेरिका, पश्चिम एशिया, अफ्रीका और काकेकस इलाके तक कमाल किए हुए है। आलम यह है कि ब्रह्मोस मिसाइल का कुल ऑर्डर 7 अरब डॉलर को पार कर गया है। विशेषज्ञों के मुताबिक ब्रह्मोस सुपरसोनिक मिसाइलों में पहली पसंद बनती जा रही है और इसकी सबसे बड़ी वजह यह है कि मैक 3 की सुपरसोनिक स्पीड होने की वजह से भारतीय मिसाइल को डिटेक्ट नहीं किया जा सकता है। इससे दुश्मन को ब्रह्मोस मिसाइल के खिलाफ जवाबी ऐक्शन के लिए बहुत कम समय मिलता है।

इससे पहले सऊदी अरब में चल रहे वर्ल्ड डिफेंस शो में ब्रह्मोस के निर्यात निदेशक प्रवीण पाठक ने मंगलवार को खुलासा किया था कि इस सुपरसोनिक क्रूज मिसाइल का कुल ऑर्डर अब 7 अरब डॉलर तक पहुंच गया है। इसमें भारत और निर्यात के ऑर्डर दोनों ही शामिल हैं। रक्षा विशेषज्ञों का कहना है कि रूस के सहयोग से इस मिसाइल को बनाने के बाद अब ब्रह्मोस के अंदर काफी बदलाव कर दिया गया है। इसके लिए काफी पैसे का निवेश किया गया है। यही नहीं भारत ने ब्रह्मोस मिसाइल के सबमरीन, फाइटर जेट, युद्धपोत और जमीन से हमला करने में सक्षम वेरिपेंट का निर्माण कर लिया है।

### भारतीय सेना के पास कितनी ब्रह्मोस मिसाइल

इस तरह से भारत और रूस के बीच ब्रह्मोस मिसाइल सफलता की शानदार कहानी बन गई है। यही नहीं भारत ने हाल ही में 900 किमी तक मार करने में सक्षम ब्रह्मोस का सफल परीक्षण किया है। शुरुआती ब्रह्मोस की मारक क्षमता पहले 295 किमी तक ही थी। विशेषज्ञों के मुताबिक इस मिसाइल के टेस्ट भी करीब 100 फीसदी सफल रहे हैं। आज भारत के पास 12 हजार से ज्यादा ब्रह्मोस मिसाइल विभिन्न तरीके से भारतीय सेना के अंदर शामिल की जा चुकी है। यही नहीं भारत फिलीपीन्स समेत अब दुनियाभर के देशों को ब्रह्मोस को निर्यात करने जा रहा है।

इससे भारत अब सैन्य हथियारों का विश्वनीय आपूर्तिकर्ता बनकर उभरा है। डीआरडीओ के रिटायर वैज्ञानिक रवि गुप्ता रूसी न्यूज वेबसाइट स्पुतनिक से बातचीत में कहते हैं कि सटीकता, कलाबाजी, असाधारण स्पीड के लिहाज से दुनिया में एकमात्र असली सुपरसोनिक क्रूज मिसाइल है। दुनिया में इसके टक्कर की कोई मिसाइल नहीं है। उन्होंने कहा कि यही वजह है कि ब्रह्मोस को बड़े पैमाने पर दुनियाभर के देश खरीदना चाहते हैं। इसके अलावा भारत में ब्रह्मोस का निर्माण भी अन्य देशों की तुलना में बहुत सस्ता है।

<https://navbharattimes.indiatimes.com/world/uae/saudi-arabia-world-defence-show-know-what-makes-india-brahmos-supersonic-missile-world-favorite/articleshow/107516873.cms>



**Press Information Bureau**  
Government of India

**Ministry of Defence**

*Thu, 08 Feb 2024*

## **Armed Forces' Nari Shakti on a Global Stage: Sqn Ldr Bhawana Kanth, Col Ponung Doming & Lt Cdr Annu Prakash Share their Remarkable Journeys at World Defence Show 2024 in Riyadh**

The World Defence Show (WDS) 2024, currently being held in Riyadh, witnessed Tri-Service women representation, a testament to Prime Minister Shri Narendra Modi-led Government's vision of leveraging Nari Shakti across domains. Squadron Leader Bhawana Kanth, Colonel Ponung Doming and Lieutenant Commander Annu Prakash represented the Armed Forces in the various seminars of the WDS 2024 especially in the International Women in Defence themed events.

On February 07, 2024, Squadron Leader Bhawana Kanth, a fighter pilot from the Indian Air Force, took centre stage as a panellist at the seminar titled 'International Women in Defence - Investing in an Inclusive Future', hosted by Saudi Ambassador to the United States Princess Reema bint Bandar Al-Saud. The Squadron Leader shared her inspiring journey of breaking barriers and soaring through the skies, thus becoming a part of the revered fighter pilot club in India. Her insights on leadership, resilience and the evolving role of women in modern warfare resonated with the diverse audience, who were impressed to know about her journey. She is the first woman fighter pilot to take part in the Republic Day Parade (2021). She also participated in the Republic Day 2024 Flypast.

Colonel Ponung Doming from the Indian Army is the first woman officer to command the world's highest Border Task Force located above 15,000 feet in the Northern sector with multiple firsts to her credit in over 20 years of service. She has been at the forefront of many challenging assignments being an Engineering officer.

Lieutenant Commander Annu Prakash of the Indian Navy brought her expertise in maritime security and operations to the forefront. Her participation underscored the crucial role women play in safeguarding India's vast coastline and ensuring regional stability. Her presence at the event helped in fostering stronger ties and collaboration between India and other nations in the maritime domain.

The participation of these three exceptional women officers at the WDS 2024 served as a testament to the growing role of Indian women in the defence landscape. The trio will deliver an inspirational talk about their remarkable journey at International Indian School, Riyadh on February 08, 2024 to

about 600 school children from various schools. The event will serve as a platform in showcasing the diverse talents and leadership skills of Indian women in uniform, inspiring future generations to follow their dreams and cover new grounds.

The WDS 2024, which commenced on February 04, 2024, will culminate on February 08, 2024. Raksha Rajya Mantri Shri Ajay Bhatt visited Riyadh as head of the Indian delegation for the show.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2003811>



*Thu, 08 Feb 2024*

## **Defence Ministry Lauds Women's Participation in Saudi Defence Show**

The defence ministry on Thursday hailed the participation of women officers of the armed forces at the World Defense Show 2024 at Riyadh in Saudi Arabia, saying their presence on the global stage was a testament to the government's vision of leveraging Nari Shakti (woman power) across domains.

Squadron Leader Bhawana Kanth, Colonel Ponung Doming and Lieutenant Commander Annu Prakash represented the armed forces at the five-day show, which concluded on Thursday.

The development was first reported by HT.

The participation of these three exceptional women officers at the WDS 2024 served as a testament to the growing role of Indian women in the defence landscape, the defence ministry said in a statement.

Kanth, who currently flies the Sukhoi-30 fighter jet, was among the first three women to get commissioned into IAF as a fighter pilot in 2016.

Doming's unit is constructing a high-altitude road in Ladakh's Demchok sector to provide connectivity to one of the military's farthest outposts in the sensitive sector, Fukche, which is just three km from the Line of Actual Control (LAC). Her unit is also spearheading a key project to upgrade an advanced landing ground near LAC in eastern Ladakh to a full-fledged base for fighter operations.

Prakash, a naval air operations observer, is one for the first women officers in the navy to be serving on board a frontline destroyer, INS Kochi.

The women officers delivered a talk about their remarkable journey at International Indian School, Riyadh on Thursday with around 600 children from various schools attending the event, the ministry said.

"The event will serve as a platform to showcase the diverse talents and leadership skills of Indian women in uniform, inspiring future generations to follow their dreams and cover new grounds," it said.

On February 7, Kanth took part in a panel discussion at the show on Investing in an Inclusive Future that focussed on gender diversity and representation of women at all levels across the defence domain.

The other speakers in Kanth's panel included Major General Adel Al-Balawi, head of the armed forces, education and training authority at the Saudi ministry of defense and Air Marshal ME Sampson of the UK Royal Air Force.

"The squadron leader shared her inspiring journey of breaking barriers and soaring through the skies, thus becoming a part of the revered fighter pilot club in India. Her insights on leadership, resilience and the evolving role of women in modern warfare resonated with the diverse audience," the statement added.

<https://www.hindustantimes.com/india-news/defence-ministry-lauds-women-s-participation-in-saudi-defence-show-101707388848636.html>

# THE ECONOMIC TIMES

*Thu, 08 Feb 2024*

## **Navy Proceeds with Heavyweight Torpedo Import and Development**

The Navy will move forward to get new heavy weight torpedoes to strengthen its underwater fleet with the defence ministry considering a proposal to buy a limited quantity from a foreign supplier and approve a 'Make in India' plan for the larger requirement.

Sources said the proposal to acquire Heavy Weight Torpedoes (HWT) is set to be discussed at the ministry shortly, with 48 of the weapons to be procured directly and an indigenous development path for a significantly higher quantity being discussed.

The weapons are to be equipped on India's Kalvari (Scorpene) class of submarines that are currently being built by Mazagaon Dockyard Ltd (MDL). India has a total of six of these submarines on order and an additional three of the same class being currently negotiated. The additional submarines are likely to be fitted with Air Independent Propulsion (AIP) that gives the ability to stay underwater for several days at a stretch, adding to its stealth attack characteristics. The combined value of the two proposals is likely to exceed Rs 5000 crore and Defence Research and Development Organisation (DRDO) could take a lead role on the indigenous project by roping in a private partner.

The Navy has been seeking to acquire new HWTs for over a decade now, with initial plans to purchase Black Shark torpedoes on offer by an Italian company being cancelled after it was blacklisted in the wake of the AgustaWestland VVIP chopper scam.

The Navy had recently revived the competition and tested a German and a French torpedo for the requirement, with the French F21 coming out to be technically compliant and the lowest bidder. However, the contract could not reach the signing stage. A new competition is now likely to be conducted. Besides France and Germany, Italy too could be in the fray this time.

<https://economictimes.indiatimes.com/news/defence/navy-proceeds-with-heavyweight-torpedo-import-and-development/articleshow/107534659.cms>

## **India to Host 9-Day Milan Naval Exercise from Feb 19; 50 Countries Likely to Participate**

India will host a nine-day mega naval exercise in Visakhapatnam beginning February 19 that is expected to see participation of over 50 navies against the backdrop of fractious geopolitical environment including increasing security concerns in the Red Sea. Navies from the US, Japan, Australia, France, Bangladesh, South Korea, Vietnam, Indonesia and Malaysia are set to be among the participating nations in the 'Milan' exercise to be conducted off Visakhapatnam from February 19 to 27, officials said.

Milan is a biennial multinational naval exercise which started in 1995 with the participation of Indonesia, Singapore, Sri Lanka and Thailand in consonance with India's 'Look East' policy. The exercise flourished under the aegis of Andaman and Nicobar Command till its 10th edition.

With the growing stature of the exercise and the requirement of a larger staging and hosting base, Visakhapatnam, was chosen as the preferred venue for the exercise.

The city is ideal to host the event owing to various aspects, namely major commercial hub, large port, steep coastal gradient closer to its shores enabling ships to operate closer to the shore and long coastline offering excellent viewing experience for the public, officials said.

The scenic view from RK Beach in particular, coupled with excellent infrastructure is conducive to hosting various events planned during Milan for the local populace along the shore, such as operational demonstrations and the international city parade, they said.

The upcoming exercise would comprise two phases -- the 'Harbour phase' and the 'Sea phase'.

The harbour phase, aimed to promote cultural sharing amongst the participating nations, would consist of an international maritime seminar, international city parade, maritime exhibition and various sporting events.

In the sea phase, ships along with aircraft of friendly foreign countries would participate along with the Indian Navy's aircraft and other units, the officials said.

It will involve large-force manoeuvres, advanced air defence operations, anti-submarine warfare and anti-surface operations, they said.

"The Milan exercise is an exemplary demonstration of India's commitment towards promoting maritime cooperation and security in the Indian Ocean Region," said an official.

"India's growing strategic importance in the Indo-Pacific region has further elevated the significance of Milan exercise. It has become an attractive platform for nations to build partnerships, exchange ideas, and enhance maritime security reflecting India's commitment to being a responsible maritime power," he said.

The previous edition of the exercise took place in 2022 in Visakhapatnam.

<https://economictimes.indiatimes.com/news/defence/india-to-host-9-day-milan-naval-exercise-from-feb-19-50-countries-likely-to-participate/articleshow/107531862.cms>

## Indian, French Navy Hold 17th Staff Talks; Discuss Ongoing Naval Activities, New Avenues of Cooperation

The 17th Indian Navy (IN) and French Navy (FN) held discussions on the ongoing naval activities and new avenues of cooperation including operational, training and Subject Matter Expert exchanges in New Delhi. The 17th Indian Navy and French Navy staff talks were held from February 6 to 7 in the national capital.

The meeting was co-chaired by Rear Admiral Nirbhay Bapna, Assistant Chief of Naval Staff - Foreign Cooperation and Intelligence and Rear Admiral Jean-Marc Durandau, Director of International Engagements, French Navy.

"Broadening the scope of naval engagements, the Staff Talks encompassed fruitful discussions on ongoing naval activities & new avenues of cooperation including operational, training & Subject Matter Expert exchanges," the Indian Navy shared a post on X.

— indiannavy (@indiannavy)

Moreover, the talks witnessed active participation from both sides.

According to the post by the Indian Navy, both sides acknowledged the growing cooperation between the two navies and agreed to enhance collaboration and interoperability in the maritime domain.

Meanwhile, on the sidelines of the staff talks, Rear Admiral Jean-Marc Durandau, Director International Engagements, French Navy called on Vice Admiral Tarun Sobti, deputy chief of Naval Staff on February 7. They underscored the high level of synergy and interoperability between the Indian Navy and the French Navy.

He also visited the Information Fusion Centre - Indian Ocean Region (IFC IOR) on February 6.

The Information Fusion Centre - Indian Ocean Region (IFC-IOR), hosted by the Indian Navy, was established by the Government of India in 2018 to address this need to promote collaboration for maritime safety and security.

<https://timesofindia.indiatimes.com/india/indian-navy-and-french-navy-hold-17th-staff-talks-ongoing-naval-activities-new-avenues-of-cooperation/articleshow/107521171.cms>

## Business Standard

## India, Saudi Arabia Conduct First Joint Military Exercise 'SADA TANSEEQ'

The validation phase of 'SADA TANSEEQ', the first joint military exercise between the Indian Army and the Royal Saudi Land Force was completed at the Mahajan Field Firing Ranges on Thursday, according to an official statement. The 12-day exercise from January 29 to February 9 was aimed at achieving interoperability between the two forces and acquaint each other with operational procedures and combat drills under the UN mandate, it said.



The Indian contingent of the 20th Battalion of The Brigade of Guards Regiment and the Saudi Arabian contingent comprising a group of 45 soldiers participated in the exercise conducted in two phases. The first phase focused on combat conditioning and tactical training. The second culminated in physical exercises and validation. Both contingents jointly took part in the validation phase which included the creation of a temporary operating base, the establishment of an intelligence, surveillance and reconnaissance grid and a mobile vehicle check post and carrying out cordon-and-search operations, heliborne operations and house intervention drills.

The closing ceremony of the joint exercise will be held on Friday, the statement added.

[https://www.business-standard.com/india-news/india-saudi-arabia-conduct-first-joint-military-exercise-sada-tanseeq-124020801884\\_1.html](https://www.business-standard.com/india-news/india-saudi-arabia-conduct-first-joint-military-exercise-sada-tanseeq-124020801884_1.html)



*Thu, 08 Feb 2024*

## **Ajit Doval, Greek NSA Explore Collaboration in Cybersecurity, Space, and Defence**

India's national security advisor (NSA) Ajit Doval on Thursday held a meeting with his Greek counterpart Athanasios Ntokos in New Delhi. The meeting, in line with the shared vision of the prime ministers of both countries, delved into a spectrum of pressing issues crucial for global security and bilateral cooperation, people aware of the matter said.

Central to the discussions was the enhancement of institutional linkages between the National Security Councils of India and Greece. Both NSAs underscored the significance of robust coordination mechanisms to address emerging security challenges effectively.

The dialogue extended to encompass global and regional security dynamics, with a particular emphasis on fostering collaboration in vital domains such as cybersecurity, space exploration, and maritime security. The NSAs exchanged insights on mitigating common threats and promoting stability in the Indo-Pacific region and beyond.

They explored avenues for cooperation in futuristic technologies, defence, and infrastructure development. This includes mutual endeavours in leveraging cutting-edge innovations to bolster national security capabilities and exploring joint ventures in defence manufacturing.

<https://www.hindustantimes.com/india-news/ajit-doval-greek-nsa-explore-collaboration-in-cybersecurity-space-and-defence-101707400531996.html>



*Thu, 08 Feb 2024*

## **US Conducts Self-defence Strikes Against Houthi Cruise Missiles in Red Sea**

The United States conducted self-defence strikes on three Houthi cruise missiles in the Red Sea on Wednesday. A statement by the U.S. Central Command (CENTCOM) said that the missiles were

launched by Houthi forces from areas of Yemen under their control and posed an imminent threat to U.S. Navy ships and merchant vessels in the region.

The first strike was carried out at approximately 9 p.m. local time, with the second strike at around 11:30 p.m. The CENTCOM statement said that both strikes were against mobile anti-ship cruise missiles that were prepared to launch against ships.

“CENTCOM identified these missiles in Houthi-controlled areas of Yemen and determined they presented an imminent threat to U.S. Navy ships and merchant vessels in the region. These actions will protect freedom of navigation and make international waters safer and more secure for the U.S. Navy and merchant vessels,” the statement added.

Earlier in February, the U.S. and the U.K. launched air and surface strikes against Houthi sites in Yemen. The strikes resulted in significant civilian casualties and destruction of civilian infrastructure. The U.S. Navy seized Iranian-made ballistic and cruise missile components off the coast of Somalia, which were intended for the Houthis.

<https://theprint.in/world/us-conducts-self-defence-strikes-against-houthi-cruise-missiles-in-red-sea/1959806/>



*Thu, 08 Feb 2024*

## **South China Sea: Ships from US, Australia and Japan Conduct Joint Drills in Defiance of Beijing**

Warships from the United States, Australia and Japan conducted joint drills in the South China Sea, challenging Beijing’s claims of sovereignty over the region. The US 7th Fleet, responsible for most US Navy operations in the area, announced that the guided-missile destroyer USS John Finn and combat ship USS Gabrielle Giffords participated in operations alongside navy vessels from Japan and Australia on Wednesday and Thursday.

Details regarding the proximity of the exercises to islands and shoals claimed by Beijing, where China has constructed military bases on several islands using concrete and sand atop coral atolls, were not disclosed. China vehemently opposes foreign naval activities in the region, citing historical records to assert its ownership of the area.

Each year, an estimated \$5 trillion in international commerce passes through the South China Sea, which also holds vital fish stocks and underwater mineral resources.

The U.S. takes no formal stand on sovereignty in the area but rejects China’s claims, partly based on a 2016 ruling by a United Nations-backed court in The Hague. There was no immediate reaction to the exercises from China’s Defense Ministry.

“This multinational sail fortifies our relationship between the U.S., Japan and Australian allies,” Cmdr. Earvin Taylor, John Finn’s commanding officer, said in a statement from the 7th Fleet. “We promote transparency, rule of law, freedom of navigation and all principles that underscore security and prosperity in the Indo-Pacific.”

Australian Commodore Jonathan Ley said in the statement that such deployments are “crucial for enhancing mutual understanding and our ability to operate together.” The U.S., Australia and Japan also operate together in a strategic alliance known as the Quad that also includes India, a Chinese rival in Asia.

The Quad has frequently accused China of flexing its military muscles in the South China Sea and aggressively pushing its maritime territorial claims.

Beijing maintains that its military is purely defensive and protects its sovereign rights, and calls the Quad an attempt to contain its economic growth and influence.

The navies of the four countries regularly hold drills seen as part of an initiative to counter China's growing assertiveness in the Pacific and Indian oceans and waters surrounding Taiwan. China and Japan also claim exclusive ownership over an uninhabited island group in the East China Sea controlled by Tokyo, with China routinely dispatching ships and planes to the area.

China applies similar tactics with Taiwan, a self-governing island republic of 23 million that it claims as its own territory, to be conquered by force if necessary. Taiwan's Defense Ministry said Thursday it had detected four Chinese ships operating in the area and that it had, as usual, upgraded security ahead of the Lunar New Year holiday starting at the end of the week.

<https://www.firstpost.com/world/south-china-sea-ships-from-us-australia-and-japan-conduct-joint-drills-in-defiance-of-beijing-13705992.html>

## Science & Technology News

THE HINDU  
**BusinessLine**

*Fri, 09 Feb 2024*

### **ISRO to Launch INSAT-3DS Meteorological Satellite on February 17**

Indian Space Research Organisation (ISRO) will launch meteorological satellite INSAT-3DS on February 17 with the GSLV-F14/INSAT-3DS mission set for lift off at 5.30 pm from SDSC-SHAR, Sriharikota. This will be ISRO's second launch in the current calendar after the successful launch of XPoSAT from Sriharikota on January 1 in PSLV's 60th flight.

The current mission is fully funded by the Ministry of Earth Sciences, says a release from ISRO.

In its 16th mission, the GSLV aims to deploy the INSAT-3DS meteorological satellite into the Geosynchronous Transfer Orbit (GTO). Subsequent orbit-raising manoeuvres will ensure the satellite is positioned in a geo-stationary orbit.

The mission's primary objectives are to monitor Earth's surface, carry out oceanic observations and its environment in various spectral channels of meteorological importance, provide the vertical profile of various meteorological parameters of the atmosphere to provide the data collection and data dissemination capabilities from the Data Collection Platforms and to provide satellite aided search and rescue services, the release said.

#### **INSAT-3DS**

INSAT-3DS Satellite is a follow-on mission of Third Generation Meteorological Satellite from geostationary orbit. It is designed for enhanced meteorological observations and monitoring of land and ocean surfaces for weather forecasting and disaster warning. The satellite will augment the

Meteorological services along with the presently operational INSAT-3D and INSAT-3DR satellites. Indian Industries have significantly contributed to the making of the satellite, the release said.

Various departments of the Ministry of Earth Sciences (MoES), such as the India Meteorology Department, National Centre for Medium-Range Weather Forecasting, Indian Institute of Tropical Meteorology, National Institute of Ocean Technology, Indian National Center for Ocean Information Services and various other agencies and institutes will be using the INSAT-3DS Satellite data to provide improved weather forecasts and meteorological services.

#### **GSLV-F14**

GSLV is a three-stage 51.7 m long launch vehicle with a liftoff mass of 420 tonnes. The first stage (GS1) comprises a solid propellant (S139) motor having a 139-tonne propellant and four earth-storable propellant stages (L40) strap-ons, each carrying 40 tonnes of liquid propellant.

The second stage (GS2) is also an earth-storable propellant stage loaded with 40-ton propellant.

The third stage (GS3) is a cryogenic stage with a 15-ton propellant loading of liquid oxygen (LOX) and liquid hydrogen (LH2).

During the atmospheric regime, the satellite is protected by Ogive payload fairing. GSLV can be used to launch a variety of spacecraft capable of performing communications, navigation, earth resource surveys, and any other proprietary mission, the release said.

<https://www.thehindubusinessline.com/news/science/isro-to-launch-insat-3ds-meteorological-satellite-on-february-17/article67827978.ece>

